

- c) a topical carrier for the anti-microbial active and the metal salt;

wherein the weight ratio of the metal source to the anti-microbial active is from about 5:100 to about 5:1 and wherein at least 50% of the anti-microbial active is insoluble in the composition.

54. (New) A topical composition according to Claim 1, wherein the composition comprises from greater than about 2% to about 10%, by weight of the composition, of the metal ion source.

REMARKS

Application Amendments

By the amendments presented, Claim 1 has been amended to more specifically define the present invention, wherein the metal ion source has been amended to be present at greater than about 1% to about 10%. Support for the amendment to Claim 1 can be found in Applicants' Specification at Page 5, line 32 to Page 6, lines 1-2 and in the Examples at pages 59-62. Specifically Examples 7, 16 and 20 disclose zinc sulfate present at 1%.

Likewise, Claim 10 has been amended to more specifically define the present invention, wherein the metal ion source has been amended to be present at greater than about 1% to about 2%. Claims 26, 28 and 36 have been amended to more specifically define the present invention, wherein the metal ion source is present at greater than about 1% to about 5%. Support for the amendments to Claims 10, 26, 28 and 36 can be found in Applicants' Specification at Page 5, line 32 to Page 6, lines 1-2 and in the Examples at pages 59-62. Specifically, Examples 7, 16 and 20, disclose zinc sulfate present at 1%, and Examples 6, 12, 15, 19 disclose zinc sulfate present at 2%.

New Claims 51-54 have been added to cover embodiments of the present invention. No new matter has been added. Support for new claim 51 can be found in Applicants' specification at Page 5, line 33 to Page 6, lines 1-2, as well as in Examples 3, 4-7, 8-11, 13, 14, 16-18, and 20-21, wherein copper sulfate pentahydrate is a metal ion source. Support for new claim 52 can be found in Applicants' specification at Pages 60-

63, wherein Examples 14-26 are free of from about 1 ppm to about 30 ppm of a preservative selected from the group consisting of 5-chloro-2-alkyl-4-isothiazolin-3-one, 2-alkyl-4-isothiazolin-3-one, wherein the alkyl is selected from the group consisting of methyl, ethyl, butyl, propyl and mixtures thereof. Support for new claim 53 can be found in Applicants' Specification at Page 63, Example 26, wherein zinc sulfate is present at 0.5%. Support for new claim 54 can be found in the Applicants' Specification at Pages 58-62, wherein zinc sulfate is present at 2% in Examples 6, 12, 15, 19.

With regard to the rejection of Claims 1-25, 28-30, 36-38, 42-50 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification, Applicants have amended Claim 1 by deleting the matter "...wherein the pH of the composition is greater than 7 when the metal ion source is a zinc salt." Reconsideration and removal of the 35 U.S.C. 112 rejection are respectfully requested.

Upon entry of the amendments and new claims presented, Claims 1-54 remain in the application. An additional claims fee is due as a result of these amendments. This additional claims fee is charged to the Assignee's Deposit Account via the attached cover sheet.

INTERVIEW SUMMARY

Applicants conducted a telephone interview with Examiner DeWitty and Primary Examiner Clarity on January 29, 2003. In attendance for the Applicants were Dr. James R. Schwartz, Dr. George Polson, Ms. Linda M. Sivik and Mr. Dale Carlson.

During the course of the interview, a summary of the present invention was discussed; differentiation of the present invention from the cited reference, U.S. Patent 5,227,156 ("Weiss") was discussed; and proposed claim amendments were reviewed and discussed. The Examiners agreed to consider applicants' submission in the form of the instant Amendment After Final Rejection. Claim formats discussed in the interview, for purposes of distinguishing the Wiese reference, included claims wherein (1) the metal ion source is other than zinc, (2) there is a specific recitation 'free of isothiozoline', and (3) the metal ion source is present in an amount of greater than about 1% up to about 10%. The instantly amended claims are respectively believed to properly distinguish over the disclosures contained in the Wiese reference.

Invention Synopsis

The present invention relates to topical compositions for the treatment of microbial infections on the skin or scalp which include a polyvalent metal salt of pyrithione and include a metal ion source. The present invention also relates to methods of treating microbial infections of the skin or scalp using such compositions. The present invention further relates to methods of regulating or stimulating hair growth or inhibiting or reducing hair loss using such compositions.

Art Rejections**35 U.S.C. § 103(a)**

Claims 1-25, 28-30, 36-38 and 42-46 are rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Wiese (U.S. 5,227,156). Applicants respectfully traverse this rejection.

Wiese discloses that the activity of a thiazolinone preservative, in an anti-dandruff shampoo containing pyrithione, is maintained by adding a stabilizer comprising a zinc compound. Specifically, Wiese discloses an aqueous anti-dandruff shampoo comprising up to about 40% of a surfactant, from about 0.1% to about 2% zinc pyrithione, from about 1 to about 30 ppm of a preservative selected from the group consisting of 5-chloro-2-alkyl-4-isothiazolin-3-one, 2-alkyl-4-isothiazolin-3-one, wherein the alkyl is selected from the group consisting of methyl, ethyl, butyl, propyl and mixtures thereof, from about 0.001% to about 1% of a preservative stabilizer comprising a zinc compound selected from the group consisting of a zinc salt of an organic acid, a zinc salt of an inorganic acid, zinc oxide, zinc hydroxide, and mixtures thereof, and the balance comprising water.

However, the present invention, as now claimed, is neither disclosed nor made obvious by Wiese. Wiese only teaches and is limited to from about 0.001% to about 1% of a preservative stabilizer comprising a zinc compound. As stated above, Applicant's Examples 7, 16 and 20 all teach 1% of zinc sulfate and Examples 6, 12, 15, 19 discloses zinc sulfate present at 2%. Therefore, Applicants have submitted amended claims directed toward a metal ion source being present at greater than about 1% to about 10% in

amended Claims 1, 10, 26, 28 and 36. In addition, Applicants have submitted Claim 54 directed toward a metal ion source being present at greater than about 2% to about 10%.

Further, Weise is only directed toward compositions which require a specified thiazolinone preservative. Therefore, Applicants have submitted Claim 52 which is free of such a specified thiazolinone preservative and is supported in the specification as indicated in the remarks above.

Weise teaches only the use of zinc compounds to stabilize a thiazolinone preservative. The present invention teaches metal ions other than zinc which will provide an unexpected benefit with ZPT; Weise teaches only zinc useful to stabilize a thiazolinone preservative. The present invention includes a metal ion source that also can be selected from copper salts, silver salts, nickel salts, cadmium salts, mercury salts, bismuth salts and mixtures thereof. Therefore, Applicants have submitted Claim 51 wherein zinc has been deleted as a metal ion source. This claim is supported in the specification as indicated in the remarks above.

Applicants have submitted Claim 53 directed toward a composition comprising from about 0.001% to about 10%, by weight of the composition, of an anti-microbial active selected from the group consisting of polyvalent metal salts of pyrrhione; from about 0.5% to about 10%, by weight of the composition, of a metal ion source, and a topical carrier. Support for Claim 53 in the Applicants' specification can be found in Example 26 on page 63, wherein zinc sulfate is present at 0.5% and thus provides basis for the lower end of the metal ion source range above.

Applicants would like to direct the Examiner's attention to the point that, although Weiss claims a preservative stabilizer in the range of 0.001% to 1%, Weiss does not directionally teach a preservative stabilizer in the range of from about 0.5% to about 10%. Further, Wiese's examples teach away from the present invention. Wiese exemplifies very low levels of zinc oxide and zinc chloride in Example 1 and Example 2. Example 1 teaches 0.05 % by weight zinc chloride and Example 2 teaches 0.07% by weight of zinc oxide and 0.05% by weight of zinc chloride. Weise also teaches at Column 3, lines 47-49, that preferably the stabilizer is added at a level from about 0.01% to about 0.1%. Again, Weiss is clearly teaching in a direction away from the present invention. In the present invention, Examples 6, 7, 12, 15, 16, 19 and 20 disclose aqueous compositions

comprising zinc sulfate present at 2% and 1%, respectively. Further, Example 26 of the present invention teaches a composition comprising zinc sulfate present at 0.5%. Clearly one of skill in the art would not be lead to the present invention by the teachings of Wiese. If one of skill in the art were to make the exemplified compositions of Wiese, they would not arrive at the present invention's compositions comprising an anti-microbial active selected from the group consisting of polyvalent metal salts of pyrithione; a metal ion source; and a topical carrier.

Therefore, as now amended, the present invention is novel and unobvious over Wiese, as supported by the remarks above.

Conclusion

Applicants have made an earnest effort to place their application in proper form and distinguish their claimed invention from the prior art which was applied in the September 10, 2002 Final Office Action, as well as meet the requirements as set forth in the telephone interview conducted with the Examiners on January 29, 2003. WHEREFORE, consideration of this application, consideration of the accompanying claims and claim amendments submitted herewith, withdrawal of the rejections under 35 U.S.C § 112 and 35 U.S.C § 103, and allowance of Claims 1-54 are respectfully requested.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claim 1 has been amended as follows:

1. (TWICE AMENDED) A topical composition for treating microbes, in order to inhibit or prevent the growth on the skin or scalp of said microbes, comprising:

a) from about 0.001% to about 10%, by weight of the composition, of an anti-microbial active selected from the group consisting of polyvalent metal salts of pyrithione;

b) from greater than about [0.001] 1% to about 10%, by weight of the composition, of a metal ion source selected from group consisting of zinc salts, copper salts, silver salts, nickel salts, cadmium salts, mercury salts, bismuth salts, and mixtures thereof; and

c) a topical carrier for the anti-microbial active and the metal salt;

wherein the weight ratio of the metal source to the anti-microbial active is from about 5:100 to about 5:1 and wherein at least 50% of the anti-microbial active is insoluble in the composition [and further wherein the pH of the composition is greater than 7 when the metal ion source is a zinc salt].

10. (AMENDED) A topical composition according to Claim 7, wherein the composition comprises from greater than about [0.1] 1% to about 2%, by weight of the composition, of the metal ion source.

26. (AMENDED) A topical anti-dandruff composition comprising:

a) from about 0.1% to about 2%, by weight of the composition, of zinc pyrithione;

b) from greater than about [0.01] 1% to about 5%, by weight of the composition, of a metal ion source useful for increasing efficacy of zinc pyrithione selected from the group consisting of zinc salts, copper salts, silver salts, nickel salts, cadmium salts, mercury salts, bismuth salts;

c) a topical carrier for said zinc pyrithione and said metal ion source[.];
wherein the weight ratio of the metal source to the anti-microbial active is from about 5:100 to about 5:1 and wherein at least 50% of the zinc pyrithione is insoluble in the composition.

28. (AMENDED) A shampoo composition useful for improving the appearance of scalp exhibiting dandruff symptoms, said composition comprising:

a) from about 0.3% to about 2%, by weight of the composition, of zinc pyrithione;

b) from greater than about [0.01] 1% to about 5%, by weight of the composition, of a metal ion source selected from the group consisting of zinc acetate, zinc oxide, zinc carbonate, zinc hydroxide, zinc chloride, zinc sulfate, zinc citrate, zinc fluoride, zinc iodide, zinc lactate, zinc oleate, zinc oxalate, zinc phosphate, zinc propionate, zinc salicylate, zinc selenate, zinc silicate, zinc stearate, zinc sulfide, zinc tannate, zinc tartrate, zinc valerate, zinc gluconate, zinc undecylate, copper disodium citrate, copper triethanolamine, copper carbonate, cuprous ammonium carbonate, cupric hydroxide, copper chloride, cupric chloride, copper ethylenediamine complex, copper oxychloride, copper oxychloride sulfate, cuprous oxide, copper thiocyanate, and mixtures thereof;

c) a topical carrier for said zinc pyrithione and said metal ion source; and

d) a deterative surfactant;

wherein the weight ratio of the metal source to the anti-microbial active is from about 5:100 to about 5:1 and wherein at least 50% of the zinc pyrithione is insoluble in the composition.

36. (AMENDED) A topical anti-microbial composition prepared by the process of mixing:

a) from about 0.1% to about 2%, by weight of the composition, of an anti-microbial active selected from the group consisting of polyvalent metal salts of pyrithione;

b) from greater than about [0.01] 1% to about 5%, by weight of the composition, of a metal ion source selected from group consisting of zinc salts, copper salts, silver salts, nickel salts, cadmium salts, mercury salts, bismuth salts, and mixtures thereof; and

c) a topical carrier for the anti-microbial active and the metal salt[.];

wherein the weight ratio of the metal source to the anti-microbial active is from about 5:100 to about 5:1 and wherein at least 50% of the anti-microbial active is insoluble in the composition.